State of Illinois
Department of Transportation
Bureau of Materials and Physical Research

POLICY MEMORANDUM

November 15, 2005	Springfield	05-05

TO: REGIONAL ENGINEERS AND HIGHWAY BUREAU CHIEFS

SUBJECT: REINFORCEMENT BAR AND/OR DOWEL BAR PLANT CERTIFICATION PROCEDURE

1.0 SCOPE

1.1 This procedure shall apply to all Producers that supply reinforcement bars to State of Illinois projects. No reinforcement bars may be used unless the Producer has been certified.

2.0 PURPOSE

2.1 To establish a procedure whereby Producers may supply reinforcement bars and/or dowel bars based on their status as a Certified Producer.

2.2 To set forth the procedures and conditions for Producer certification.

3.0 APPLICABLE SPECIFICATIONS

3.1 ASTM A706/A706M, “Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement” (current year issued).

3.2 ASTM A36/A36M, “Standard Specification for Standard Carbon Structural Steel” (current year issued).

3.3 AASHTO M227/M227M, "Steel Bars, Carbon, Merchant Quality, Mechanical Properties" (current year issued).

3.4 Illinois Department of Transportation Standard Specifications for Road and Bridge Construction (current year issued).

4.0 DEFINITIONS

BUREAU - Bureau of Materials and Physical Research, Springfield, Illinois.

CERTIFIED MILL ANALYSIS - A document prepared by the Producer that lists all chemical and physical test results as required by the applicable specifications. The following must also be included in addition to any other data deemed necessary by the Producer:

- Producer name and address
- Type and grade
- Heat number
- Authorized signature of person responsible for quality control
- Date melted and where in the United States
- Date rolled
- Date printed

DEPARTMENT - Illinois Department of Transportation.

REGION/DISTRICT - A Bureau of Materials is located at each Illinois Department of Transportation District.

ENGINEER - The Director of Highways of the Illinois Department of Transportation or authorized representative limited by the particular duties entrusted to that person.

INSPECTION EXPENSE - The cost of inspection for plant certification will be borne by the Producer. A Producer intending to supply reinforcement bars and/or dowel bars to Illinois projects shall contact the Engineer of Materials and Physical Research, Bureau of Materials and Physical Research, 126 East Ash Street, Springfield, Illinois 62706, to arrange for the required sampling. At the Producer's option, sampling arrangements will be made through an approved private inspection agency or by a State of Illinois inspector. All samples to be tested by the Bureau will be shipped at the Producer's expense.

PRODUCER - A steel mill that produces as-rolled deformed reinforcement bars and/or dowel bars.

PRODUCER CLASSIFICATION - A Producer under this procedure will be classified as Certified, Decertified, or Non-Certified.

CERTIFIED PRODUCER - A Producer that has met the requirements for certification under this policy and is allowed to supply reinforcement bars and/or dowel bars to Illinois highway projects.

DECERTIFIED PRODUCER - A Producer whose Certified status has been rescinded because one or more of their products have not consistently met requirements or their certification status has not been maintained. A Decertified Producer is not allowed to supply reinforcement bars and/or dowel bars to Illinois highway projects.

NON-CERTIFIED PRODUCER - A Producer that does not meet certification requirements according to this policy or has not been checked for certification and is not qualified to supply reinforcement bars or dowel bars to Illinois highway projects.

MISTIC - Materials Integrated System for Test Information and Communication.

5.0 CERTIFICATION PROCEDURE

5.1 GENERAL - Certification shall be based on the following: (a) satisfactory compliance of heats tested to standard specifications; (b) satisfactory comparison of test results between laboratories; and (c) satisfactory compliance to stated conditions for random samples taken from plant stock melted and rolled within two (2) months of sampling. The method of certification shall consist of both the Producer and the Bureau testing sample bars from the same heats within a two (2) month period for conformance to specifications. The test results obtained by the Producer laboratory shall be compared with the Bureau laboratory test data. The differences in the comparison of test data from the laboratories must fall within the product limits specified.

5.1.1 ACCEPTANCE UNDER CERTIFIED PRODUCER STATUS - Under Certified Producer status, plant stock will be checked periodically to the conditions stated herein. Field acceptance of reinforcement bars and/or dowel bars will be based on evidence that the products were manufactured and shipped by a Certified Producer. All shipments of reinforcement bars and/or dowel bars to State of Illinois projects must be clearly identified, as required in Paragraph 5.3. Reliability of data will be verified periodically by comparison tests and random samples from the jobsite.

5.2 SAMPLING AND TESTING PROCEDURE - The Engineer will select samples and witness bend tests at the location of the Producer. The results of other tests performed by the Producer shall be forwarded to the Bureau. The material to be sampled shall be selected from sizes, grades, and heats in stock. The date and time shall be prearranged by the Bureau and the Producer.

5.2.1 SAMPLING FREQUENCY - Samples shall be taken from 3 different bars and/or dowels from 10 different heats. Each sample shall be from a different bar size when available.

5.2.2 SAMPLE SIZE - Each sample bar shall be tagged on both ends with the same identification number. Each identification number shall be unique. Samples smaller than 25 mm (#8) shall be 2.5 m (8 ft). Sample sizes of 25mm (#8 bar) and larger shall be 3 m (10 ft). For ease of handling two (2) specimens shall be made by cutting the bar into two (2) equal lengths.

5.2.3 SAMPLE TESTING - One (1) specimen from each sample shall be tested by the Producer and the test results entered on the attached Reinforcing Bar Certification Form. This form shall be signed and submitted to the Bureau laboratory. The specimen that is to be sent to the Bureau shall contain all the markings normally used by the Producer.

5.3 PRODUCER RESPONSIBILITY

5.3.1 Test sample specimens shall be cut and identified by the Producer in the presence of the Engineer, and all necessary facilities shall be made available to the Engineer to perform his assigned duties. Producer plant facilities, witnessing of testing, and test records shall be accessible to the Engineer or his representative at all times.

5.3.2 The plant laboratory test equipment shall be maintained in good working order and calibrated annually by a qualified testing agency with a testing device traceable to the National Institute of Standards and Technology.

5.3.3 The Producer, through his supplier if applicable, shall be responsible for supplying material identification consisting of the following: rolled markings, source identification (i.d.) tags, purchase orders, bill of lading, certified mill analysis, or any other documents of certification required by the Engineer to make identification and satisfy reporting requirements.

5.3.4 For a period of five years, the Producer shall maintain all Certified Mill Analyses for reinforcing bars produced, and if applicable, dowel bars. Records shall be available for review during working hours by properly identified Illinois Department of Transportation employees.

5.4 BUREAU RESPONSIBILITY - The Bureau shall test the companion specimens and subsequently determine if Certified Producer status shall be granted. The Producer will be notified in writing as to test results and Producer Classification. Copies of the updated Certified Producers list will be distributed to all Regions/Districts.

5.5 RESIDENT ENGINEER / RESIDENT TECHNICIAN RESPONSIBILITY - The Resident Engineer or Resident Technician at the construction site shall make positive identification between the bar identification marks or source i.d. tags, and the bill of lading or invoice. Material from a Certified Producer shall be accepted and reported to the Region/District Materials Engineer for entry into MISTIC.

6.0 REQUIREMENTS FOR CERTIFICATION

6.1 TESTS AND SPECIFICATIONS - The methods of tests and specification requirements shall be in accordance with the applicable specifications.

6.2 LABORATORY COMPARISON REQUIREMENTS - Test results for sample of three (3) specimens cut from the same heat and run at each laboratory shall vary between laboratories by no more than the following:

Unit Weight…….	1.0 percentage point
Yield……..	10.0 percent (see Paragraph 6.2.3)
Tensile……..	10.0 percent
Elongation.....	4.0 percentage points

6.2.1 The differences in average test results for the same sample from the same heat run at each laboratory shall vary between laboratories by no more than the following:

Unit Weight…….	1.0 percentage point
Yield……..	4.0 percent (see Paragraph 6.2.3)
Tensile…….	4.0 percent
Elongation.....	3.0 percentage points

6.2.2 Any heat failing to meet Paragraphs 6.2 or 6.2.1 may be resampled. The resampling shall consist of three (3) additional bars from the same heat.

6.2.3 Failure of less than 90% of comparable test values to agree within the above limits and meet the minimum product limits will constitute failure to obtain Certified Producer status. Producer will be in Non-Certified Producer status. Yield comparisons may be waived for "coiled" bars at the discretion of the Department.

6.3 QUALITY REQUIREMENTS - No more than one (1) heat shall have any of the average test results, as determined in Paragraph 6.2.1, below the applicable specification minimums as tested at either laboratory.

6.3.1 The failure of more than one (1) specimen per heat to meet the bend test will constitute rejection of that heat. No more than one (1) heat may fail the bend test.

6.3.2 Failure to meet Paragraphs 6.3 or 6.3.1 or specified chemical analysis will constitute failure to obtain Certified Producer status.

6.4 All resampled heats or additional heats sampled shall be included in the limits for quality evaluation as specified in Paragraphs 6.3 and 6.3.1.

7.0 REQUIREMENTS DURING PERIOD OF CERTIFICATION

7.1 ENGINEER RESPONSIBILITY - Within each year, each Region/District shall take a minimum of six (6) random samples from material supplied by each Certified Producer plant supplying material to that Region/District and assigned to or designated for a State of Illinois contract. The samples shall include as many grades and sizes as are available. The samples shall be taken from different shipments and may be taken at either the jobsite, the fabricator, the warehouse, or any other location approved by the Engineer. The samples shall be sent to the Bureau laboratory for testing.

7.2 BUREAU RESPONSIBILITY - The Bureau shall be responsible for all testing and evaluation of the samples. Written notice of Producer Classification will be sent to both the Producer and all Regions/Districts.

8.0 EVALUATION OF RANDOM SAMPLES

8.1 QUALITY REQUIREMENTS - A Certified Producer may be placed on Decertified Producer status when the test results from random samples vary below the applicable minimums of the standards and specifications listed in Section 3.0 by more than the following tolerances:

Unit Weight…….	1.0 percentage point
Yield……..	5.0 percent
Tensile……..	5.0 percent
Elongation.....	2.0 percentage points

8.2 CONTROL LIMITS - (a) No more than 10% of the random test samples may fail the applicable specification minimums within the tolerances in Paragraph 8.1.

(b) No more than one (1) random test sample may fail the applicable specification minimums by more than the tolerances in Paragraph 8.1 within a one-year period.

(c) No more than one (1) random test sample may fail the bend test, with allowance for retests where included in the Material Specification within a one-year period.

1) In the event the bend failure is on an epoxy coated bar, the producer will be required to submit as-rolled bars to the BMPR on a bi-weekly basis for testing. Testing shall continue on as-rolled bars until the Engineer is satisfied the as-rolled bars meet specification.

2) If at any time two (2) or more certified epoxy coating plants fall into the category outlined in 8.2 (c) (1), the Producer shall be limited to supplying as-rolled bars to State of Illinois contracts.

8.3 Failure to meet requirements of Paragraphs 8.1 and 8.2 will place the Producer in a Decertified Producer status.

9.0 RECERTIFICATION PROCESS / CONDITIONS OF CERTIFIED PRODUCER STATUS

9.1 PROCEDURE - The same procedure (Sections 5.0 and 6.0) required to obtain Certified Producer status will be used to gain renewal of Certified Producer status.

9.1.1 TRIAL PERIOD OF ONE YEAR - Certified status for a new Producer determined under Sections 5.0 and 6.0 will be in effect for a 12-month period unless decertified under conditions of Sections 7.0 and 8.0. At that time, a second certification check to Sections 5.0 and 6.0 will be performed.

9.1.2 TWO-YEAR CERTIFICATION - A plant successfully meeting certification requirements for 2 consecutive annual checks will retain certified status for a 24-month period unless decertified under conditions of Sections 7.0 and 8.0. At that time, another check to Sections 5.0 and 6.0 will be made.

9.1.3 THREE-YEAR CERTIFICATION - A plant meeting three (3) consecutive (annual or biennial) certification checks will retain certified status for a 36-month period unless decertified under Sections 7.0 and 8.0. Thereafter, certified status will remain on a 3-year basis unless decertification occurs, and certification checks to Sections 5.0 and 6.0 will be made every 3 years.

9.1.4 DECERTIFICAION STATUS - Upon decertification, the plant will revert to a new plant status, and all variable certification periods and checks will apply. A plant decertified a second time under Sections 7.0 and 8.0 within one year of the first decertification will be on non-certified status for a minimum of one year from the date of the second decertification. After one year, a Decertified Producer may request a retest for Certified Producer status provided the producer can demonstrate proof to the Engineer that the causes for the deficiencies have been remedied.

9.2 GAINING CERTIFICATION AFTER BEING ON NON-CERTIFIED OR DECERTIFIED PRODUCER STATUS - A Producer on the Non-Certified Producer or Decertified Producer status may gain Certified Producer status at the next annual renewal inspection provided he meets the testing procedures required for Certified Producer status. A Non-Certified Producer or a Decertified Producer may request a retest for Certified Producer status prior to the annual renewal inspection provided he can demonstrate proof to the Engineer that causes of the deficiencies have been remedied.

10.0 REPORTING

A copy of the shipping orders or invoice showing job identification, size, grade, heat, and total weight shall be provided to the Resident Engineer and the Region/District Materials Engineer. The Resident Engineer shall make positive identification between the bar identification marks, or i.d. tags, and the Certified Producer list. Materials from a Certified Producer will be accepted and entered into the MISTIC report system by the Region/District Materials Engineer.

David L. Lippert, P.E.
Acting Engineer of Materials
and Physical Research

Attachment

This Policy Memorandum supersedes Policy Memorandum No. 01-17 dated November 1, 2001.

ILLINOIS DEPARTMENT OF TRANSPORTATION
Bureau of Materials and Physical Research
REINFORCING BAR PRODUCER CERTIFICATION FORM

Producer Name_____ Location_____ MISTIC P/S No_____

Heat No._____Type _____Grade_____Inspection Date_____

PRODUCER TEST RESULTS					***BUREAU TEST RESULTS (For Bureau use only)***				
Ident. No.				Average	Ident. No.				Average
Size					Size				
Nom. Area, Sq in. (mm^2)					Nom. Area, Sq in. (mm^2)				
Nom. Wt, Lb/sq ft(kg/m)					Nom. Wt, Lb/sq ft(kg/m)				
Weight, lbs (g)					Weight, lbs (g)				
Length, in. (mm)					Length, in. (mm)				
Actual Wt. Lb/sq ft (kg/m)					Actual Wt. Lb/sq ft (kg/m)				
Wt. Variation from Nom. %					Wt. Variation from Nom. %				
Yield Load Lbs. (N)					Yield Load Lbs. (N)				
Yield Strength Psi (kPa)					Yield Strength Psi (kPa)				
Variation From Spec. %					Variation From Spec. %				
Max. Load Lbs. (N)					Max. Load Lbs. (N)				
Tensile Strength Psi (kPa)					Tensile Strength Psi (kPa)				
Variation from Spec. %					Variation from Spec. %				
Elongation in 203 in. (mm.)					Elongation in 203 in. (mm.)				
Variation from Spec. %					Variation from Spec. %				
Bend Test					Bend Test				

Signature and organization of Engineer performing sampling and witnessing of Producer tests: _____

Results: _____

Remarks: _____